PARYLENE CAPACITIVE ACCELEROMETER UTILIZING ELECTRICAL FRINGING FIELD SENSING AND METHOD OF MAKING

ABSTRACT OF THE DISCLOSURE

An accelerometer device comprises a dielectric seismic mass separated by a gap from an underlying comb-shaped planar capacitor. The principle for measuring acceleration detecting capacitance change according to movement of the dielectric mass in the fringe electrical field. This measuring principle is verified by FEM simulation. The simple structure of the accelerometer device allows the polymer Parylene to be used as the proof mass, greatly simplifying the technology by requiring only surface micromachining. Prototype accelerometers are fabricated and calibrated with the aid of off-chip capacitive readout IC.